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News Release

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Sickle Cell may Confound Blood Sugar Readings of African-Americans

PROVIDENCE, R.I. – A new study in the Journal of the American Medical Association provides evidence that a common blood biomarker used to measure blood sugar over time may not perform as accurately among African-Americans with sickle cell trait.

"For patients with diabetes, HbA1c is often used as a marker of how well they are managing their diabetes, so having an underestimation of their blood sugars is problematic because they might have a false sense of security, thinking they are doing okay when they are not," said Dr. Wen-Chih Wu, a cardiologist at the Providence Veterans Affairs Medical Center and associate professor of medicine and of epidemiology at Brown University, who is the study's senior author. "This could be a particular concern of African-American Veterans, because diabetes is roughly twice as prevalent among Veterans versus the general population."

Sickle cell trait (SCT) is a genetic hemoglobin variant found in 8 to 10 percent of African-Americans. It occurs in people with one copy of the mutation that, if they had two copies, would result in sickle cell disease. The analysis of data from more than 4,600 people participating in two major studies found that HbA1c readings were significantly lower in individuals with SCT than in those without SCT, even after accounting for several possible confounding factors.

While the study showed that HbA1c readings were significantly different between people with and without SCT, it also showed that blood glucose readings were not, suggesting that glucose metabolism is not necessarily different between the two groups as the HbA1c readings alone would suggest. The study does not explain why the HbA1c readings differ.

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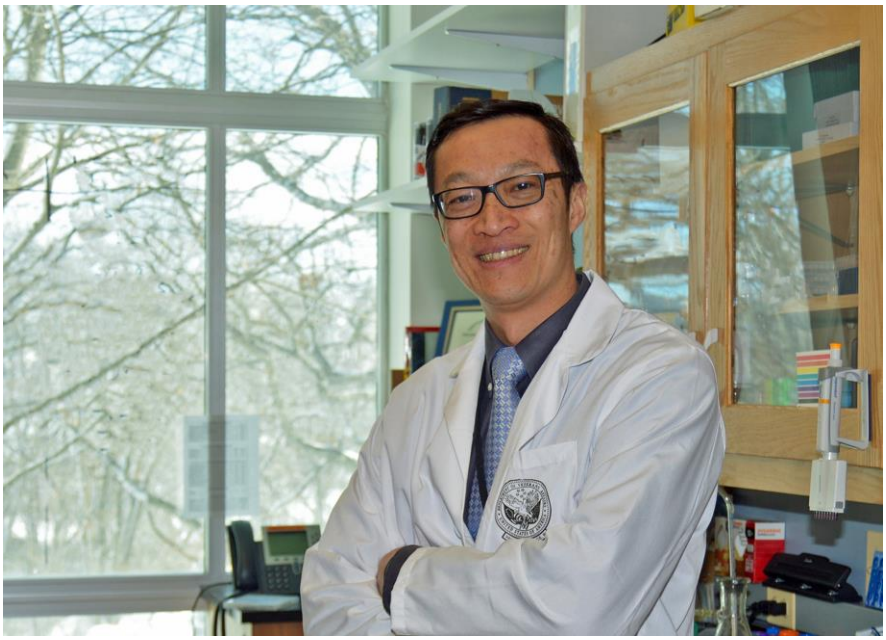
"Irrespective of the reason of the underestimation, the underestimation is very real, and clinicians should consider screening for sickle cell trait and account for the difference in HbA1c," Wu said.

More information about the study and paper can be found on the Brown University website at https://news.brown.edu/articles/2017/02/sickle.

In addition to Wu, the paper's other authors are lead author Mary Lacy, a doctoral candidate at the Brown University School of Public Health, and Drs. Gregory Wellenius, Anne Sumner, Adolfo Correa, Mercedes Carnethon, Robert Liem, James Wilson, David Sacks, David Jacobs Jr., April Carson, Xi Luo, Annie Gjelsvik, Alexander Reiner, Rakhi Naik, Simin Liu, Solomon Musani and Charles Eaton. The National Institutes of Health and the Department of Veterans Affairs funded the study.



Dr. Wen-Chih "Hank" Wu, a cardiologist at the Providence Veterans Affairs Medical Center and associate professor of medicine and of epidemiology at Brown University, and senior author of a new study in the Journal of the American Medical Association that provides evidence a common biomarker used to measure blood sugar over time may not perform as accurately among African-Americans with sickle cell trait. (Providence VA Medical Center photo by Kimberly DiDonato)

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